

In the claims:

1. (Currently Amended) A method of fabricating a mask for patterning a semiconductor wafer with at least one feature having rounded edges, comprising the steps of:
providing a mask blank suitable for patterning, said mask blank comprising including a substrate and an opaque material formed thereon; and
patterning the opaque material with oval or rounded features using an elliptical-shaped energy beam; and
projecting an energy beam having an elliptical cross-sectional shape onto said mask blank, said elliptical cross-sectional shape defining a long axis and a short axis;
positioning said long axis of said energy beam at a first angular position with respect to said mask blank and providing relative movement between said mask blank and said energy beam to form a first portion of said at least one feature; and
positioning said long axis of said energy beam on said mask blank to a second angular position and providing relative motion movement between said mask blank and said energy beam to form a second portion of said at least one feature.
2. (Currently Amended) The method according to Claim 1, ~~wherein the elliptical-shaped energy beam includes a long axis and a short axis, wherein an edge along the energy beam long axis is used to pattern oval features on the wafer~~ said mask blank.
3. (Original) The method according to Claim 1, further comprising using the mask to fabricate a semiconductor device.

4. (Currently Amended) A method of fabricating a mask for patterning a semiconductor device with at least one feature having rounded edges, comprising the steps of:
providing a substrate including an opaque material formed thereon;
projecting an energy beam onto said mask to form forming a pattern on the opaque material, portions of the pattern having stair-step shaped edges; and
projecting and angularly positioning an elliptical-shaped energy beam onto said mask to
reduce reducing the stair-step shaped edges formed on the opaque material with an elliptical-shaped energy beam.

5. (Original) The method according to Claim 4, wherein forming a pattern comprises forming a pattern having at least one edge having two sides being positioned at substantially right angles to one another to form a substantially right-angle corner, wherein reducing the stair-step shaped edges comprises smoothing the right-angle corners.

*A
Cont.*

6. (Currently Amended) The method according to Claim 5, wherein said step of projecting an energy beam to form said forming a pattern comprises using a circular-shaped energy beam to form the pattern.

7. (Original) The method according to Claim 4, wherein the elliptical-shaped energy beam includes a long axis and a short axis, wherein an edge along the energy beam long axis is used to remove the stair-step shaped edges.

8. (Original) The method according to Claim 4, wherein forming a pattern comprises forming oval or rounded features.

9. (Original) The method according to Claim 4, wherein reducing the stair-step shaped edges comprises using a laser or electron energy beam.

10. (Original) The method according to Claim 4, further comprising using the mask to pattern a semiconductor wafer.

11. (Original) The method according to Claim 10, wherein the semiconductor wafer patterned comprises a magnetic random access memory (MRAM) or dynamic random access memory (DRAM) device.

A
1
Cont.

12. (Currently Amended) A method of fabricating a mask for patterning a semiconductor device with at least one feature having rounded edges, comprising the steps of:

providing a substrate including made of a transparent material;
depositing an opaque material over the substrate;
using a substantially circular-shaped energy beam to form a pattern including oval or rounded features on the opaque material, portions of the oval or rounded features including undesired stair-step shaped edges; and

at least partially removing the oval or rounded feature stair-step shaped edges with by projecting and angularly positioning an elliptical-shaped energy beam.

13. (Original) The method according to Claim 12, wherein the oval or rounded features stair-step shaped edges include at least one edge having two sides being positioned at substantially right angles to one another to form a substantially right-angle corner, wherein removing the stair-step shaped edges comprises removing the right-angle corners.

14. (Original) The method according to Claim 13, wherein the elliptical-shaped energy beam includes a long axis and a short axis, wherein an edge along the energy beam long axis is used to remove the stair-step shaped edges.

15. (Original) The method according to Claim 14, wherein removing the oval or rounded feature stair-step shaped edges comprises using a laser or electron energy beam.

A
Cont.

16. (Original) The method according to Claim 12, further comprising using the mask to fabricate a semiconductor device.

17. (Original) The method according to Claim 16, wherein the semiconductor device fabricated comprises a magnetic random access memory (MRAM) or dynamic random access memory (DRAM) device.

18. (Currently Amended) A method of fabricating a semiconductor device with at least one feature having rounded edges, comprising the steps of:

providing a semiconductor wafer;

pattern the semiconductor wafer with a mask, the mask including oval or rounded

features; features formed using an elliptical-shaped energy beam;

forming said mask comprising the steps of:

providing a mask blank suitable for patterning said mask blank comprising a substrate and an opaque material formed thereon;

patterning the opaque material with oval or rounded features using an elliptical-shaped energy beam;

projecting an energy beam having an elliptical cross-sectional shape onto said mask blank, said elliptical cross-sectional shape defining a long axis and a short axis;

positioning said long axis of said energy beam at a first angular position with respect to said mask blank and providing relative movement between said mask blank and said energy beam to form a first portion of said at least one feature; and

positioning said long axis of said energy beam on said mask blank to a second angular position and providing relative motion movement between said mask blank and said energy beam to form a second portion of said at least one feature.

*A
Cont.*

19. (Cancelled)

20. (Currently Amended) The method according to Claim 1918, wherein the elliptical-shaped energy beam includes a long axis and a short axis, wherein an edge along the energy beam long axis is used to remove the stair-step shaped edges of the mask.

21. (Currently Amended) The method according to Claim 1918, wherein removing the stair-step shaped edges of the mask comprises using a laser or electron energy beam.

22. (Original) The method according to Claim 18, further comprising:
depositing a resist layer on the semiconductor wafer, wherein the mask is used to pattern
the resist layer.

A1
23. (Original) The method according to Claim 18, wherein the semiconductor device
fabricated comprises a magnetic random access memory (MRAM) or dynamic random access
memory (DRAM) device.

24-28 (Cancelled)

29. (New) The method of Claim 1, wherein said energy beam remains stationary and said
mask blank moves.

A2
30. (New) The method of Claim 1, wherein said mask blank remains stationary and said
energy beam moves.